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(71)出願人 000183406

住友電装株式会社

三重県四日市市西末広町1番14号

(72)発明者 二村 和彦

三重県四日市市西末広町1番14号 住友電
装株式会社内

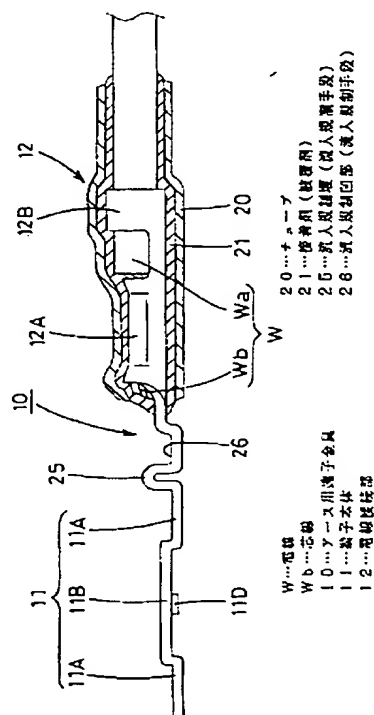
(74)代理人 弁理士 後呂 和男 (外1名)

(54) 【発明の名称】 アース用端子金具

(57) 【要約】

【課題】 電線接続部における芯線からの電線内部への浸水を防止する

【解決手段】 電線Wが圧着された電線接続部12に、内周に接着剤（被覆剤）21が塗布された熱収縮性のチューブ20を外嵌し、そのチューブ20を加熱する。すると、熱収縮作用によってチューブ20が電線接続部12と芯線Wbに密着し、接着剤21が芯線Wbを被覆するようになる。これにより、芯線Wbが露出したままにならずに済み、芯線Wbからの水の浸入が防止される。また、流入規制凹部（流入規制手段）26と流入規制堰（流入規制手段）25を設けて接着剤21が端子本体11側へ流入することを規制したので、接着剤21の付着に起因する接触不良が防止される。



【特許請求の範囲】

【請求項 1】 接地部に対して導通可能に接触される端子本体と、この端子本体に連なり電線の露出させた芯線の圧着を可能とされた電線接続部とを備えてなるアース用端子金具において、

前記電線接続部とこの電線接続部に圧着された前記芯線とを包囲可能であるとともに内周に被覆剤が塗布された熱収縮性のチューブを備え、前記チューブを熱収縮作用によって前記電線接続部と前記芯線に密着させることで前記被覆剤で前記芯線を被覆する構成としたことを特徴とするアース用端子金具。

【請求項 2】 前記電線接続部と前記端子本体との間に、前記被覆剤の前記端子本体への流入を規制可能な流入規制手段を設けたことを特徴とする請求項 1 記載のアース用端子金具。

【発明の詳細な説明】

【0001】

【発明の属する技術分野】本発明は、アース用端子金具に関する。

【0002】

【従来の技術】アース用端子金具は、接地部に接触する端子本体と電線が圧着される電線接続部とを有し、電線接続部は、電線の樹脂被覆に圧着されるインシュレーションバレルと、樹脂被覆を向いて露出させた芯線に圧着されるワイヤバレルとから構成される。

【0003】

【発明が解決しようとする課題】芯線は複数本の金属細線を撚り合わせて構成されているのであるが、従来のアース用端子金具ではワイヤバレルとの圧着部において芯線が露出したままとされていた。そのため、芯線の露出部分に水が付着すると、その水が毛細管現象により金属細線同士の隙間を通して樹脂被覆の内部に浸入する虞があった。本願発明は上記事情に鑑みて創案されたものであって、電線接続部における芯線からの電線内部への浸水を防止することを目的とするものである。

【0004】

【課題を解決するための手段】請求項 1 の発明は、接地部に対して導通可能に接触される端子本体と、この端子本体に連なり電線の露出させた芯線の圧着を可能とされた電線接続部とを備えてなるアース用端子金具において、前記電線接続部とこの電線接続部に圧着された前記芯線とを包囲可能であるとともに内周に被覆剤が塗布された熱収縮性のチューブを備え、前記チューブを熱収縮作用によって前記電線接続部と前記芯線に密着させることで前記被覆剤で前記芯線を被覆する構成とした。

【0005】請求項 2 の発明は、請求項 1 の発明において、前記電線接続部と前記端子本体との間に、前記被覆剤の前記端子本体への流入を規制可能な流入規制手段を設けた構成とした。

【0006】

【発明の作用及び効果】

＜請求項 1 の発明＞電線接続部に圧着された芯線は、チューブの熱収縮作用による密着力を利用して被覆剤により被覆されるので、芯線が露出したままにならずに済み、芯線からの電線内部への浸水が防止される。

【0007】＜請求項 2 の発明＞流入規制手段を設けたことによって被覆剤が端子本体へ流入することを規制するようにしたので、端子本体に被覆剤が付着することに起因する接触不良を防止することができる。

【0008】

【発明の実施の形態】

＜実施形態 1＞以下、本発明を具体化した実施形態 1 を図 1 乃至図 3 を参照して説明する。本実施形態では、2 つ一組として組み付けられるアース用端子金具 10 に適用した例について説明する。各アース用端子金具 10 は、夫々、概ね平板状をなす端子本体 11 とこの端子本体 11 の後縁から延出する電線接続部 12 とを備えてなり、この双方のアース用端子金具 10 は、端子本体 11 同士が上下に重ね合わされて係止されるとともに電線接続部 12 同士が左右に並列する形態で組み付けられる。組付けたアース用端子金具 10 は、その取付孔 13 をアース用の接地面に立設したスタッドボルト（図示せず）に嵌合してそのスタッドボルトに螺合したナット（図示せず）を締め付けることにより、接地されるようになっている。

【0009】次に、アース用端子金具 10 の構成を詳述するが、両アース用端子金具 10 は、その端子本体 11 が互いに上下反転させた形状となっておりとともに電線接続部 12 が同じ形状であるため、一方のアース用端子金具 10 のみについて説明し、他方のアース用端子金具 10 については説明を省略する。端子本体 11 は、取付孔 13 の前後両側に配した平坦な重ね合わせ部 11A と、取付孔 13 の左右両側に配されて重ね合わせ部 11A と段差状に連結した係止部 11B とからなり、一方のアース用端子金具 10 の重ね合わせ部 11A の上面に他方のアース用端子金具 10 の重ね合わせ部 11A が重ね合わせされるとともに、一方のアース用端子金具 10 の係止部 11B の下に他方のアース用端子金具 10 の係止部 11B が潜り込み、係止部 11B の係止孔 11C と係止爪 11D（図 3 に示す）とを係止させることによって両アース用端子金具 10 が一体的に組み付けられる。

【0010】電線接続部 12 は、端子本体 11 の後縁における左右いずれかに偏った位置から後方へ延出するように一体成形され、端子本体 11 に近い側のワイヤバレル 12A と端子本体 11 から遠い側のインシュレーションバレル 12B とからなる。インシュレーションバレル 12B にはアース用の電線 W の端末の樹脂被覆 Wa で覆われた部分が圧着され、ワイヤバレル 12A にはその電線 W の樹脂被覆 Wa を剥いて露出させた芯線 Wb が圧着されている。芯線 Wb は、複数本の金属細線（図示せ

ず)を撚り合わせて構成されているため、毛細管現象により金属細線同士の隙間を通して水が樹脂被覆Waの内部に浸入する虞があるが、後述する被覆手段によって浸水防止が図られている。

【0011】電線接続部12と、電線Wの電線接続部12への圧着部分と、電線Wの電線接続部12からの延出部分は、チューブ20と接着剤(本発明の構成要件である被覆剤)21とによって被覆された状態となっている。チューブ20は、熱収縮性を有する樹脂材料からなり、圧着前の電線Wに予め外嵌されている。また、接着剤21は、チューブ20の内周に塗布されており、常温では容易に血の外へ流れ出さない程度の高粘度を保ち、チューブ20に熱収縮を生じさせる温度に加熱すると粘度が低下して容易に流動するようになっている。

【0012】電線接続部12における端子本体11と接続される帯状の領域には、その一部を鉤寄せるように曲げることによりその全幅に亘って左右方向に伸びる流入規制堰(本発明の構成要件である流入規制手段)25が形成されている。また、この流入規制堰25よりも電線接続部12側の領域が電線接続部12よりも低くなった流入規制凹部(本発明の構成要件である流入規制手段)26となっている。次に、本実施形態作用について説明する。アース用端子金具10に電線Wを接続する際には、まず、図2に示すように、接着剤21が塗布されているチューブ20を電線Wに外嵌するとともに、その電線Wの樹脂被覆Waで覆われた部分と樹脂被覆Waを剥いて露出させた芯線Wbとを、夫々、インシュレーションパレル12Bとワイヤパレル12Aとに圧着する。この状態では、まだ、芯線Wbが露出したままである。

【0013】次に、チューブ20を、電線Wに沿ってスライドさせ、電線接続部12及び電線Wの電線接続部12からの延出部を囲むように位置させる。この状態で、電熱器などの加熱手段によりチューブ20を加熱する。すると、チューブ20は熱収縮して電線接続部12、電線Wの電線接続部12への圧着部分、及び電線Wの電線接続部12からの延出部分を締め付ける。これに伴い、接着剤21がチューブ20の収縮力によって電線接続部12、芯線Wb及び樹脂被覆Waに密着する。また、接着剤21は、加熱により粘度が低下して流動し易くなるため、上記各部材との間に大きな隙間を空けることがない。更に、接着剤21は、チューブ20の前端から端子本体11側へ少し流れ出し、芯線Wbの外周面だけでなく前端面も完全に覆う状態となる。以上のようにして、電線接続部12、電線Wの電線接続部12への圧着部分、及び電線Wの電線接続部12からの延出部分が、チューブ20と接着剤21とにより外部から覆い隠されて水密状態に保護されるのである。

【0014】また、チューブ20は単純な筒形であることから芯線Wbの前端面をチューブ20だけで隠し隠すことは難しい。そのため、チューブ20の前端部におけ

る接着剤21の塗布量を多くし、接着剤21を芯線Wbの前端面まで十分に回り込むようにすることが好ましい。ところが、接着剤21の量を多くすると、加熱した際に接着剤21が端子本体11側へ過剰に流れ出す虞がある。しかし、接着剤21の流出量が多くても、その接着剤21は流入規制凹部26に貯め込まれることによって端子本体11に達することが防止される。例えば、流入量が流入規制凹部26から溢れる程多くなっても、流入規制堰25によって端子本体11への流入を確実に規制することができる。

【0015】上述のように、本実施形態においては、電線接続部12に圧着された芯線Wbを、チューブ20の熱収縮作用による密着力を利用して接着剤21で被覆しているため、芯線Wbが露出したままにならずに済み、芯線Wbから電線Wの内部への浸水を確実に防止することができる。また、流入規制凹部26と流入規制堰25を設けたことによって接着剤21が端子本体11へ流入することを規制するようにしたので、端子本体11に接着剤21が付着することに起因して接触不良を生じることが防止されている。

【0016】<実施形態2>次に、本発明を具体化した実施形態2を図4を参照して説明する。本実施形態2は、流入規制手段を上記実施形態1とは異なる構成としたものである。その他の構成については上記実施形態1と同じであるため、同じ構成については、同一符号を付し、構造、作用及び効果の説明は省略する。本実施形態2のアース用端子金具30では、電線接続部12の端子本体11との接続部分の左右両縁に一对の側壁31を形成し、この両側壁31の後縁から内向きに延出する一对の流入規制壁(本発明の構成要件である流入規制手段)32を形成し、この両流入規制壁32の内縁同士を密着させた構成となっている。電線接続部12側から流れ出した接着剤(図4には示さない)は、この一对の流入規制壁32で堰き止められることにより端子本体11への流れ込みが防止される。

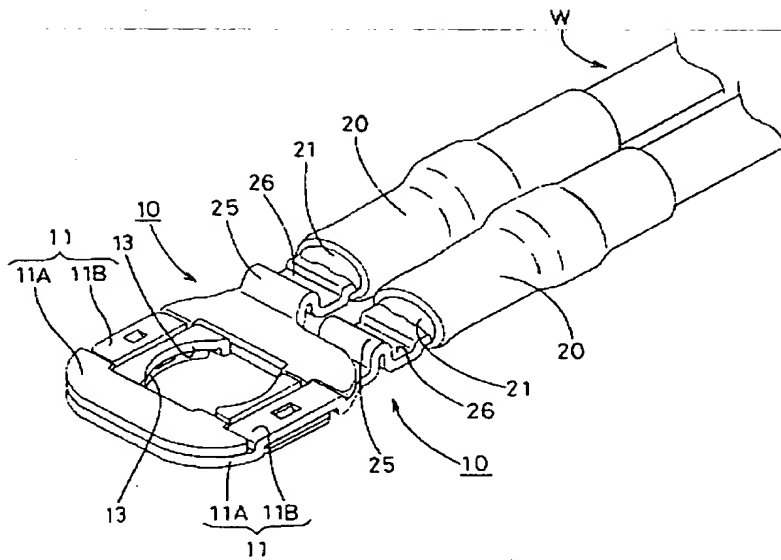
【0017】<実施形態3>次に、本発明を具体化した実施形態3を図5を参照して説明する。本実施形態3も、流入規制手段を上記実施形態1とは異なる構成としたものである。本実施形態3のアース用端子金具40では、電線接続部12の端子本体11との接続部分を部分的にほぼ垂直に切り起こすことによって流入規制壁(本発明の構成要件である流入規制手段)41が形成されている。電線接続部12側から流れ出した接着剤(図5には示さない)は、この流入規制壁41に流動を規制されることにより端子本体11への流れ込みが防止される。なお、接着剤が流入規制壁41を迂回してその左右両側を通過しても、その通過経路42は細長い形状であることから、端子本体11に至る前に垂れ落ちてしまい、端子本体11へ流れ込む虞はない。

【0018】<実施形態4>次に、本発明を具体化した

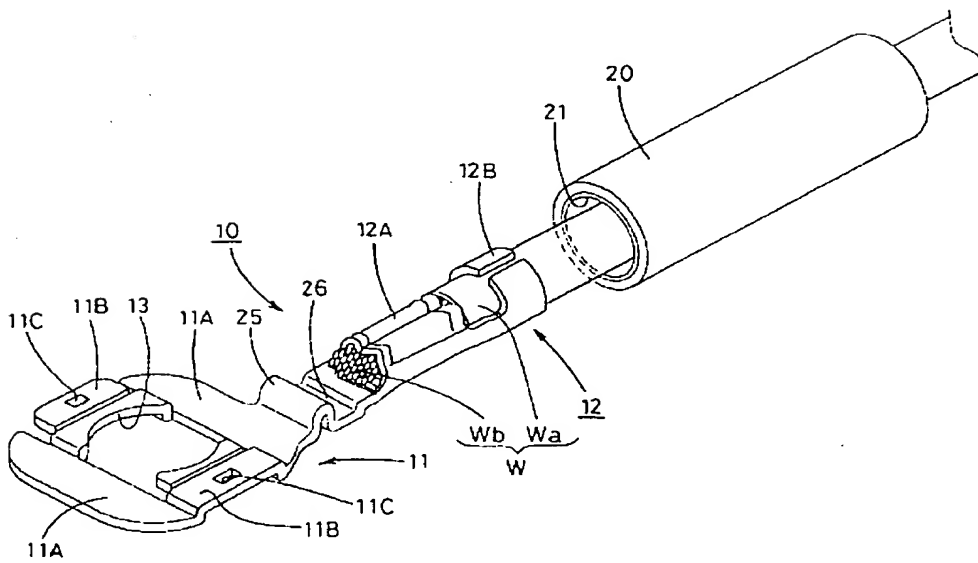
Figure 6 is a cross-sectional view of a semiconductor device. It shows a substrate with several layers and structures. Label 10 points to a gate electrode. Label 11 points to a gate insulating layer, which is divided into regions 11A, 11B, 11C, and 11D. Label 12 points to a side wall or spacer, with sub-labels 12A and 12B indicating different parts. Label 20 points to a channel region, and label 21 points to a source/drain region. Label 25 points to a gate insulating layer on the side wall, and label 26 points to a gate insulating layer on the top surface. The diagram also shows a cross-section of a wire (W) and a contact pad (Wb).

| | |
|-------------|---------------------|
| W…電線 | 20…チャープ |
| Wb…芯線 | 21…接合剤（被覆剤） |
| 10…アース用端子金具 | 25…流入規制壁（流入規制手段） |
| 11…端子本体 | 26…流入規制凹部（流入規 手段） |
| 12…電線保護部 | |

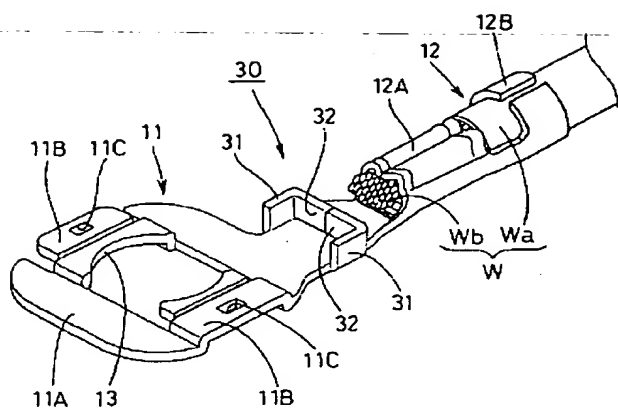
【図 1】



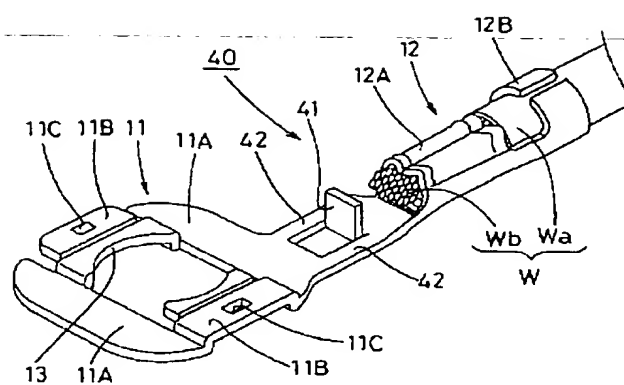
【図 2】



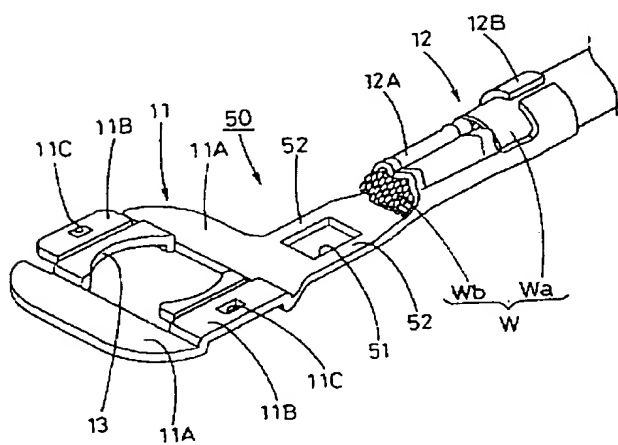
【図4】



【図5】



【図6】



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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

[The technical field to which invention belongs] this invention relates to the terminal metallic ornaments for grounding.

[0002]

[Description of the Prior Art] The terminal metallic ornaments for grounding have the wire-jointing section to which the terminal mainframe in contact with the grounding section and electrical wire are stuck by pressure, and the wire-jointing section consists of an insulation barrel stuck to resin covering of electrical wire by pressure, and a wire barrel stuck to the core wire which turned to resin covering and was exposed by pressure.

[0003]

[Problem(s) to be Solved by the Invention] Although the core wire twisted two or more metal thin lines and was constituted, by the conventional terminal metallic ornaments for grounding, it was presupposed that the core wire had been exposed of the core wire in the sticking-by-pressure section with a wire barrel. Therefore, when water adhered to a part for the outcrop of a core wire, there was a possibility that the water might infiltrate into the interior of resin covering through the opening between metal thin lines by the capillarity. The invention in this application is originated in view of the above-mentioned situation, and it aims at preventing the flood inside [from the core wire in the wire-jointing section] electrical wire.

[0004]

[Means for Solving the Problem] In the terminal metallic ornaments for grounding which come to have the wire-jointing section made possible in sticking by pressure of the core wire which invention of a claim 1 stood in a row on the terminal mainframe contacted possible [a flow] to the grounding section, and this terminal mainframe, and electrical wire exposed It has the tube of thermal-contraction nature with which coating was applied to inner circumference while the aforementioned core wire stuck to the aforementioned wire-jointing section and this wire-jointing section by pressure could be surrounded. It considered as the configuration which covers the aforementioned core wire with sticking the aforementioned tube to the aforementioned wire-jointing section and the aforementioned core wire by thermal-contraction operation by the aforementioned coating.

[0005] Invention of a claim 2 was taken as the configuration which established the inflow regulation means which can regulate an inflow on the aforementioned terminal mainframe of the aforementioned coating between the aforementioned wire-jointing section and the aforementioned terminal mainframe in invention of a claim 1.

[0006]

[Function and Effect of the Invention]

Since the core wire stuck to the <invention of claim 1> wire-jointing section by pressure was covered with coating using the adhesion force by thermal-contraction operation of a tube, it is not necessary to remain exposed [a core wire], and the flood inside [from a core wire] electrical wire is prevented.

[0007] Since it regulated that coating flowed into a terminal mainframe by having established the <invention of claim 2> inflow regulation means, the poor contact resulting from coating adhering to a terminal mainframe can be prevented.

[0008]

[Embodiments of the Invention]

The operation gestalt 1 which materialized this invention is explained with reference to the drawing 1 or the drawing 3 below the <operation gestalt 1>. This operation gestalt explains the example applied to the terminal metallic ornaments for grounding 10 attached as 2 couples. Each terminal metallic ornaments for grounding 10 come to have the wire-jointing section 12 which extends from the trailing edge of the terminal mainframe 11 which makes plate-like in general, and this terminal mainframe 11, respectively, and the terminal metallic ornaments for grounding 10 of these both sides are attached with the gestalt which wire-jointing section 12 comrades arrange in parallel right and left while terminal mainframe 11 comrades pile up up and down, are put together and stopped. The attached terminal metallic ornaments for grounding 10 are grounded by binding tight the nut (not shown) which fitted into the stud bolt (not shown) which set up the mounting hole 13 to the ground plane for grounding, and was screwed in the stud bolt.

[0009] Next, although the configuration of the terminal metallic ornaments for grounding 10 is explained in full detail, since the wire-jointing section 12 is the same configuration while the terminal mainframe 11 serves as the configuration which carried out vertical inversion mutually, the terminal metallic ornaments for both groundings 10 explain only one terminal metallic ornaments for grounding 10, and omit an explanation about the terminal metallic ornaments for grounding 10 of another side. Flat superposition section 11A which arranged the terminal mainframe 11 on mounting hole 13 order both sides, It consists of the stop section 11B which was allotted to the right-and-left both sides of a mounting hole 13, piled up, and was connected section 11A and in the shape of a level difference. While superposition of the superposition section 11A of the terminal metallic ornaments for grounding 10 of another side is carried out to the top of superposition section 11A of one terminal metallic ornaments for grounding 10 the bottom of stop section 11B of one terminal metallic ornaments for grounding 10 -- stop section 11B of the terminal metallic ornaments for grounding 10 of another side -- hidden -- a stop of stop section 11B -- a hole -- the terminal metallic ornaments for both groundings 10 are attached in one by stopping 11C and stop presser-foot-stitch-tongue 11D (shown in drawing 3)

[0010] The wire-jointing section 12 is really fabricated so that it may extend to back from the position which inclined toward the right and left in the trailing edge of the terminal mainframe 11 either, and it consists of the wire barrel 12A of the side near the terminal mainframe 11, and the insulation barrel 12B of a side far from the terminal mainframe 11. The fraction covered by the resin covering Wa of the terminal of electrical-wire W for grounding is stuck to insulation barrel 12B by pressure, and the core wire Wb which skinned the resin covering Wa of the electrical-wire W, and was exposed is stuck to wire barrel 12A by pressure. Since a core wire Wb twists two or more metal thin lines (not shown) and is constituted, although it has a possibility that water may infiltrate into the interior of the resin covering Wa through the opening between metal thin lines by the capillarity, flood prevention is achieved by covering means to mention later.

[0011] The sticking-by-pressure fraction to the wire-jointing section 12 and the wire-jointing section 12 of electrical-wire W and the extension fraction from the wire-jointing section 12 of electrical-wire W are in the status that it was covered with a tube 20 and the adhesives (coating which is the requirements for a configuration of this invention) 21. A tube 20 consists of a resin material which has thermal-contraction nature, and is beforehand attached outside electrical-wire W before sticking by pressure. Moreover, in ordinary temperature, it will be applied to the inner circumference of a tube 20, adhesives 21 maintain the hyperviscosity of the grade which does not flow out out of blood easily, and if it heats to the temperature which makes a tube 20 produce a thermal contraction, viscosity will fall and they will flow easily.

[0012] the band-like field connected with the terminal mainframe 11 in the wire-jointing section 12 -- the part -- wrinkled ** -- the inflow regulation weir (inflow regulation means which are the requirements

for a configuration of this invention) 25 which covers full [the] and is extended to a longitudinal direction is formed by bending like Moreover, it is the inflow regulation concavity (inflow regulation means which are the requirements for a configuration of this invention) 26 to which the field by the side of the wire-jointing section 12 became lower than the wire-jointing section 12 rather than this inflow regulation weir 25. Next, this operation gestalt operation is explained. While the tube 20 with which adhesives 21 are applied is first attached outside electrical-wire W as shown in drawing 2 in case electrical-wire W is connected to the terminal metallic ornaments for grounding 10, the core wire Wb which skinned the fraction and the resin covering Wa which were covered by the resin covering Wa of the electrical-wire W, and was exposed is stuck to insulation barrel 12B and wire barrel 12A by pressure, respectively. In this status, the core wire Wb has still been exposed.

[0013] Next, you make a tube 20 slide along with electrical-wire W, and make it located so that the extension section from the wire-jointing section 12 and the wire-jointing section 12 of electrical-wire W may be surrounded. In this status, a tube 20 is heated by heating means, such as an electric heater. Then, the thermal contraction of the tube 20 is carried out, and it binds the sticking-by-pressure fraction to the wire-jointing section 12 and the wire-jointing section 12 of electrical-wire W, and the extension fraction from the wire-jointing section 12 of electrical-wire W tight. In connection with this, adhesives 21 stick to the wire-jointing section 12, the core wire Wb, and the resin covering Wa with the shrinkage force of a tube 20. Moreover, since viscosity falls by heating and it becomes easy to flow, adhesives 21 do not leave a big opening between the above-mentioned each part material. Furthermore, adhesives 21 flow out of the front end of a tube 20 into the terminal mainframe 11 side for a while, and not only the periphery side of a core wire Wb but a front end side will be in the wrap status completely. The sticking-by-pressure fraction to the wire-jointing section 12 and the wire-jointing section 12 of electrical-wire W and the extension fraction from the wire-jointing section 12 of electrical-wire W are covered from the exterior by the tube 20 and the adhesives 21 as mentioned above, and it is protected by the watertight status.

[0014] moreover, the front end side of the core wire Wb since a tube 20 is a simple cartridge -- a tube 20 -- ***** -- things are difficult Therefore, it is desirable that make [many] the coverage of the adhesives 21 in the front end section of a tube 20, and it is fully made to turn around adhesives 21 to the front end side of a core wire Wb. However, when the amount of adhesives 21 was made [many] and it heats, there is a possibility that adhesives 21 may flow into the terminal mainframe 11 side superfluously. However, even if there are many flows of adhesives 21, it is prevented that the adhesives 21 reach the terminal mainframe 11 by storing to the inflow regulation concavity 26. Even if it increases so that a metaphor and inflow overflow from the inflow regulation concavity 26, an inflow on the terminal mainframe 11 is certainly controllable with the inflow regulation weir 25.

[0015] As mentioned above, since the core wire Wb stuck to the wire-jointing section 12 by pressure was covered with adhesives 21 using the adhesion force by thermal-contraction operation of a tube 20, it is not necessary to remain exposed [a core wire Wb], and in this operation gestalt, the flood inside electrical-wire W can be certainly prevented from a core wire Wb. Moreover, since it regulated that adhesives 21 flowed into the terminal mainframe 11 by having formed the inflow regulation concavity 26 and the inflow regulation weir 25, originating in adhesives 21 adhering to the terminal mainframe 11, and producing a poor contact is prevented.

[0016] The <operation gestalt 2>, next the operation gestalt 2 which materialized this invention are explained with reference to drawing 4. This operation gestalt 2 considers an inflow regulation means as the configuration which is different in the above-mentioned operation gestalt 1. Since it is the same as that of the above-mentioned operation gestalt 1 about other configurations, about the same configuration, the same sign is attached and structure, an operation, and an explanation of an effect are omitted. By the terminal metallic ornaments for grounding 30 of this operation gestalt 2, the side attachment wall 31 of a couple is formed in right-and-left both the edges for a connection with the terminal mainframe 11 of the wire-jointing section 12, the inflow regulation wall (inflow regulation means which are the requirements for a configuration of this invention) 32 of the couple which extends from the trailing edge of this both-sides wall 31 to the inner sense is formed, and it has become the

configuration of having stuck the common-law marriages of both this inflows regulation wall 32. the wire-jointing section 12 side **** -- flowing out -- the bottom -- adhesives (not shown in drawing 4) -- the inflow regulation wall 32 of this couple -- **** setting ****s -- the influx to the terminal mainframe 11 is prevented by things

[0017] The <operation gestalt 3>, next the operation gestalt 3 which materialized this invention are explained with reference to drawing 5 . This operation gestalt 3 also considers an inflow regulation means as the configuration which is different in the above-mentioned operation gestalt 1. The inflow regulation wall (inflow regulation means which are the requirements for a configuration of this invention) 41 is formed by starting partial almost perpendicularly a part for the connection with the terminal mainframe 11 of the wire-jointing section 12 by the terminal metallic ornaments for grounding 40 of this operation gestalt 3. It flows out of the wire-jointing section 12 side, and the bottom, when adhesives (not shown in drawing 5) have a flow regulated by this inflow regulation wall 41, the influx to the terminal mainframe 11 is prevented. In addition, even if adhesives bypass the inflow regulation wall 41 and pass the right-and-left both sides, the transit path 42 is given, before resulting in the terminal mainframe 11, since it is a long and slender configuration, and it falls, and there is no possibility of flowing into the terminal mainframe 11.

[0018] The <operation gestalt 4>, next the operation gestalt 4 which materialized this invention are explained with reference to drawing 6 . This operation gestalt 4 also considers an inflow regulation means as the configuration which is different in the above-mentioned operation gestalt 1. piercing a part for the connection with the terminal mainframe 11 of the wire-jointing section 12 by the terminal metallic ornaments for grounding 50 of this operation gestalt 4 -- inflow regulation -- the hole (inflow regulation means which are the requirements for a configuration of this invention) 51 is formed the wire-jointing section 12 side **** -- flowing out -- the bottom -- adhesives (not shown in drawing 6) -- this inflow regulation -- the influx to the terminal mainframe 11 is prevented by falling in a hole 51 in addition, adhesives -- inflow regulation -- even if it bypasses a hole 51 and it passes the right-and-left both sides, the transit path 52 is given, before resulting in the terminal mainframe 11, since it is a long and slender configuration, and it falls, and there is no possibility of flowing into the terminal mainframe 11

[0019] Within limits which it is not limited to the operation gestalt explained with the above-mentioned description and the drawing, and the following embodiments are also included in the technical domain of this invention, for example, do not deviate from a summary further besides the following, an operation gestalt > this invention besides < can be changed variously, and can be carried out.

(1) Although the inflow regulation means was formed in the terminal metallic ornaments for grounding with the above-mentioned operation gestalt at one, according to this invention, you may be made to attach the parts for inflow regulation of another field to the terminal metallic ornaments for grounding.

[0020] (2) Although the inflow regulation means of coating was established with the above-mentioned operation gestalt, if there is no possibility that coating may flow into a terminal mainframe side, it is not necessary to establish an inflow regulation means.

(3) this invention is applicable also to the terminal metallic ornaments for grounding of the type grounded by independent [which it does not attach with other terminal metallic ornaments for grounding] although the above-mentioned operation gestalt explained the case where the terminal metallic ornaments for grounding were the things of other terminal metallic ornaments for grounding, and the combination type which can be attached.

[0021] (4) Although adhesives were used as coating with the above-mentioned operation gestalt, according to this invention, it is possible to use things other than adhesives as coating.

(5) Although the inflow regulation concavity and the inflow regulation wall were established as an inflow regulation means with the above-mentioned operation gestalt 1, you may be made to perform inflow regulation of adhesives only by any of an inflow regulation concavity and an inflow regulation wall, or one side.